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Ministry  
of Defence



Issue 1

# **EXERCISE ASTRAL CLIMB 22<sup>ND</sup> JUNE 2016**

## **EXERCISE DIRECTOR'S POST EXERCISE REPORT**

—OFFICIAL—

Defence Equipment & Support



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Our Reference:  
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Date: 30<sup>th</sup> September 2016

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## **EXERCISE ASTRAL CLIMB 2016 – EXERCISE DIRECTOR'S POST EXERCISE REPORT**

### References:

- A. JSP 471
- B. JSP 483 Vol 3
- C. JSP 538
- D. LAESI
- E. Operational Order Banknote
- F. Astral Climb 2016 Distaff and Assessor Instruction
- G. SMARTEU Exercise Report
- H. DNSR Exercise Astral Climb Assessment Report

1. Nuclear emergency response exercise Astral Climb 2016 was conducted on 22<sup>nd</sup> June 2016 at Longannet Power Station Fife, Scotland. The exercise included the annual assessed Nuclear Standardisation Test (NST) for the Road Convoy Group Immediate Response Force (IRF)
2. This report focuses mainly on the execution and facilitation of the exercise as the formal assessment will be provided in the Regulator's Report. It is distributed for action or consideration where appropriate, in order to inform both the planning of future exercises and the review of existing Nuclear Emergency Organisation (NEO) plans.
3. A number of comments raised by individual members of Directing Staff (Distaff) and players were captured at the exercise debriefs. These comments are included for consideration. It should be noted that whilst these comments are the view of experienced individuals, they are not to be considered as any form of assessment.
4. A Hot Wash meeting took place with the various teams immediately after the exercise. A Cold Wash up meeting was held with the Civil Emergency Services (CES) and the Local Resilience Forum (LRF) on 2<sup>nd</sup> August 2016. A summary of the points raised at these meetings has been incorporated into this report.
5. All participating organisations are thanked for their effort and commitment given to the planning and delivery of this exercise.

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Signed on original

[REDACTED]

[REDACTED] Nuclear Emergency Response

Annexes:

- A. Exercise Director's Report Exercise Astral Climb 2016
- B. Summary of the Astral Climb 2016 Cold Wash up meeting
- C. List of abbreviations

Distribution:

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SWPT TRM – Exercise Director  
AWE NTR Team Leader  
AWE Distaff – Exercise Controller  
AWE Sponsor  
AWE Lead Planner  
AWE Convoy Group  
AWE Convoy Group  
MDP SPO  
MDP SEG  
MDP SEG  
SWPT Distaff  
SWPT Change Agent  
SWPT Capability Manager  
SWPT Capability Officer  
DNSR  
DNSR  
SWPT Safety Officer  
SMARTEU  
SMARTEU  
SMARTEU

## EXERCISE ASTRAL CLIMB 2016 – EXERCISE DIRECTOR' S REPORT

### BACKGROUND

1. Exercise Astral Climb 2016 was a level 1 assessed Field Training Exercise and a requirement of regulatory Authorising Condition 11. The exercise was planned to test and demonstrate the Command and Control activities of the MOD Road Convoy Immediate Response Force (IRF) and to demonstrate their integration with the responding Civilian Emergency Services (CES). The exercise took place on 22<sup>nd</sup> June 2016 at Longannet Power Station, Fife, Scotland.

### EXERCISE PLANNING

2. Planning for the exercise was led and coordinated by the SW NEO [REDACTED] Nuclear Emergency Organisation (SW NEO) and supported by staff from AWE. A series of exercise planning meetings were held with MOD and other organisations supporting the SW NEO response, together with local CES partners from the Scottish Multi Agency Resilience Training and Exercising Unit (SMARTEU). A Project Management Plan was produced and maintained to identify key planning activities. Whilst the key objective was to provide a vehicle to demonstrate a satisfactory response, a secondary objective was to maximize the opportunity for additional training activities to take place.

3. Exercise Astral Climb 2016 consisted of a Nuclear Transport Emergency (Road) Nuclear Weapon (NW) scenario to provide training opportunities for the various teams of responders. The scenario was as follows;

- a. A road convoy is travelling north along the A199 having been diverted from its usual route due to an earlier accident. As it approaches the junction with the A198 the driver of a heavy goods vehicle (HGV) loses control and emerges from the junction into the path of the oncoming convoy. The HGV collides with the third Truck Cargo Heavy Duty (TCHD). 2 private cars and a small van were also involved in the accident.
- b. A Nuclear Warhead (NW) inside the TCHD is disrupted by the impact and partially explodes causing a release of radioactive contamination. Passengers and drivers of both the HGV and the private cars are trapped and injured by the collision.
- c. It was accepted by all agencies participating that the energy involved in such a collision would not be sufficient to cause a release of radioactive material and that the scenario was only being used to facilitate play.

4. Casualty actors from NIMSKI Ltd were used to provide an added level of realism to the exercise. The actors (amputees) were made up by special effects artists to simulate life threatening injuries and this produced a life-like scenario for the players from Fire and Rescue and Ambulance services.

### INTERNAL ASSESSMENT

5. As an intelligent operator and in support of the regulator, an internal assessment of the main MOD objectives for the exercise was conducted by SQEP MOD and AWE staffs. A precis of the outcome of this assessment is outlined in Section 5.



- **Appropriateness of Exercise**

- The request for participation of local resilience partnership and Scottish emergency service participation was made through the Scottish Government Regional Resilience Group.
- Scottish Multi Agency Resilience Training and Exercise Unit (SMARTEU) were then tasked to support exercise Astral Climb represented by Police, Fire and Ambulance.
- The Planning meeting programme was formally agreed and included a Scoping, Initial & Final Planning Meeting, x6 Small Group Planning Meetings (allows specific detail to be discussed / actioned) a Radioactive Materials Emergency Response Course (RAMERC) (duration: 2 days) and RAMERC Lite (1/2 day) was also included.
- All meetings were held in Scotland to allow maximum participation from the CES representatives.
- Exercise documentation was written by AWE and delivered 4 weeks prior to the exercise to SWPT. This included Di-staff and Assessor instruction, Player instruction, Master Event Scenario List (MESL) Health and Safety instruction, Exercise Security plan and DNSR assessed objectives.

- **Notification & Alerting**

- The Police Information Officer (PIO) contacted Police Scotland. Convoy Commander notified JOC and declared a Nuclear Transport Emergency.
- The JOC contacted the CES by phone and followed up with an emailed convoy risks / information.
- The Convoy Support Vehicle deployed on scene.

- **Command & Control**

- Command and Control on scene was established within 40 minutes and Police Scotland took primacy at around 75 minutes.
- Scottish Fire and Rescue Service deployed on scene within 26 minutes. It should be noted that this was an excellent effort convincingly beating the 1 hour 45 minutes from Exercise Astral Climb 2015. A Scottish Fire and Rescue radio situated with the AWE Convoy Fire service facilitated good comms and relevant discussions possible.
- Public protection advice was issued by the MDP at the RVP. Note that restrictions on the use of radios was not adequately briefed.
- The Nuclear Transport Operations Officer (NTOO) issued an initial press statement and supported a press brief with Police Scotland.

- **Emergency Response Activities**

- The convoy undertook firefighting activities, casualty assessment and rescue, integrated well with CES responders.

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- Respiratory protection was issued to the public and worked well.
- **Security Activities**
  - [REDACTED]
  - [REDACTED]
  - A member of the public was arrested due to non-compliance in cordon.
- **Monitoring & Decontamination**
  - Yellow and white monitor activities were undertaken within protocols.
  - Temporary Control Point (TCP) deployed and commissioned in a timely manner.
  - The Convoy decontamination was thorough. CES were processed as well as convoy personnel.
- **Integration of MOD FOF**
  - The handover brief was considered appropriate with all parties sufficiently briefed.

## RECOMMENDATIONS

6. Top Level recommendations arising from the exercise are detailed below:

- i) During the exercise the Police Scotland Incident Officer (PIO) was instructed that only details provided in the Media briefing pack must be released to the media. This is not correct. The media pack is offered as assistance to the Police, but there is no actual requirement for them to use it. The PIO was unfamiliar with the pack and its contents.

**Recommendation 1: It is recommended that a full Media Briefing Pack is issued to the Police Scotland PIOs that travel with the Convoy.**

- ii) The Police Scotland control room staff reported that it was impossible to understand what was being transmitted by Airwaves from the Convoy Commander due to him wearing a respirator.

**Recommendation 2: A review of convoy communications should be undertaken to determine if a more effective method of communicating alert messages can be found.**

- iii) In addition to the Convoy Commander's briefings, a number of CES meetings also took place outside of the Convoy Safety Vehicle to which the Convoy Commander was not invited. These meetings would have benefited from the Convoy Commander's technical knowledge.

**Recommendation 3: As part of the initial Convoy Commanders brief to the oncoming CES responders it should be highlighted that the Convoy Commander should be invited to all Command meetings.**

- iv) As expected, the trial provision of a Scottish Fire and Rescue Service (SFRS) radio to the AWE FRS convoy crew meant that very specific fire related information could be sent directly from the convoy fire crew to the oncoming SFRS crews to aid in their

dynamic risk assessment process. This greatly reduced the time taken for the SFRS crews to enter the cordon and assist the AWE crew then take over from them.

**Recommendation 4: It is acknowledged that AWE FRS are already in the process of procuring their own radio for use with the SFRS. It is recommended that a review is made of the other FRS radios in use in operational areas through which the convoy travel to ascertain if a similar arrangement can be made with other FRS.**

#### EXERCISE CONDUCT AND SIMULATION

7. Prior to commencement of the exercise, a series of main exercise planning meetings and small group planning meetings were held, which included site visits to Longannet Power Station. From these, together with reference to local establishment orders and other instructions, a specific exercise Astral Climb 2016 Risk Assessment was compiled and circulated to all participating stakeholder organisations. Likewise, a separate exercise Safety Health Environment & Fire (SHEF) Instruction was provided to each organisation participating, complete with verbal and written briefs being provided to all participants (including observers and visitors).
8. Preparations for the incident scenario scene setup commenced on 19<sup>th</sup> June 2016 with the construction of the simulated incident site within an area that had been identified on the Longannet site. The preparation included the placement of a large goods vehicle and three private cars together with unclassified debris (by AWE) on the roadway.
9. The MOD Co-ordinating Authority (MCA) Executive Team were pre-positioned and fed into play in accordance with the exercise timeline. To enable the MCA team to get maximum benefit they were fed into play earlier than would be realistic.
10. The Exercise Director initiated STARTEX and directed the fires to be lit. The Convoy Commander initiated the alert to the Joint Operation Centre (JOC) and Distaff then released other players (CES & MOD) into play according to the agreed timeline.
11. The first entries into the cordon were much faster than has been seen on previous exercises with the first teams entering cordon within 24mins.
12. At the conclusion of the exercise, clearance of the site commenced and the site was handed back to the site owners on the morning of the 24<sup>th</sup> June 2016.
13. There were no reported accidents or incidents during the course of exercise Astral Climb 2016
14. No damage to the environment was evident at the exercise site other than the expected scorching of grass that had been under the fire trays. All waste material was bagged and disposed of correctly on-site or removed from site by the unit responsible. Afterwards, the AWE Lead Planner and the Site Manager walked the area where exercise play had taken place and it was agreed that no waste debris had been left.

#### COMMUNICATIONS

15. Distaff were issued with Motorola Radios for the duration of the exercise which appeared to function well except covering large distances between the OPERATIONAL site and the CES Holding area. There were no faults reported during the exercise.

#### SECURITY

16. **Real Time:** MDP Officers provided 24Hr guarding and real time Control of Entry to the exercise areas via the Main Gate.
17. **Exercise Policing and Guarding:** These duties were covered by the MDP Convoy Special Escort Group.

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**EXERCISE ASTRAL CLIMB COLD WASH MEETING 2<sup>ND</sup> AUGUST 2016**  
**SUMMARY OF NOTES**

Present:

██████████	SMARTEU
██████████	SMARTEU
██████████	SMARTEU
██████████	SMARTEU
██████████	SMARTEU
██████████	AWE Convoy Safety Officer
██████████	MDP SEG
██████████	MDP Convoy Cdr
██████████	AWE NTR
██████████	AWE NTR

- ██████ – An error in the exercise JOC instruction meant that the information in writing was not sent out to the CES control room
- ██████ – Two other issues did not help, 1. These operations are not done regularly in the east of the force area and the control operator was unfamiliar with the procedures. 2. The use of exercise contact details caused an artificial delay when one of the contacts was not available
- ██████ – New Information in Writing is being developed and is at review stage. ██████ asked if he could have sight of it. This was agreed
- ██████ – Suggested that Police could do what the Fire and Rescue Service are doing in Scotland and pre issue information packs to the PIO. This was discussed and agreed as a valuable addition
- ██████ – Some responders were working very close to the truck wearing just a paper mask for PPE. Contamination levels close to the truck could be expected to be too high for this type of RPE to be effective. ██████ asked why the responders were not informed of this by the Convoy Cmdr. ██████ – it is included in the information pack that is given to the responders but attention was not drawn to it
- ██████ – The Convoy Cdr gave the initial brief to the CES responders and then gave further briefs later on. However, additional briefs were held by CES when the Convoy Cdr was not present and not aware. As a result, significant information that could have been given by the Convoy Safety Officer was missed. It was suggested that the Convoy Cdr includes that he wishes to be at all briefs in his initial brief
- ██████ – At the time when the oncoming CES responders need to get advice from the Convoy Safety Officer (CSO) the CSO is in cordon wearing a respirator. The CES found it difficult to identify who to talk to and ended up communicating with the Deputy CSO. It was agreed that the CSO should stay outside the cordon and alongside the Convoy Cmdr. This would enable him to support the Convoy Cdrs briefs and remain available to provide additional advice to CES.

**LIST OF ACRONYMS AND ABBREVIATIONS**

AWE	-	Atomic Weapons Establishment
CBRN	-	Chemical Biological Radiological Nuclear
CES	-	Civil Emergency Services
COS	-	Chief of Staff
DES	-	Defence Equipment & Support
DNSR	-	Defence Nuclear Safety Regulator
DVI	-	Disaster Victim Identification
Dstl	-	Defence Science Technology Laboratories
FRS	-	Fire and Rescue Service
GDS	-	Government Decontamination Service
HART	-	Hazardous Area Response Team (Ambulance Service)
HQ	-	Head Quarters
H&S	-	Health & Safety
IRU	-	Incident Response Unit
IRF	-	Immediate Response Force
JESIP	-	Joint Emergency Services Interoperability Program
JOC	-	Joint Operations Centre
JRLO	-	Joint Regional Liaison Officer (Army)
JSP	-	Joint Service Publication
LA	-	Local Authorities
LRF	-	Local Resilience Forum
MAU	-	Mobile Accommodation Unit
MCA	-	MOD Co-ordinating Authority
MCALO	-	MCA Liaison Officer
MDP	-	Ministry of Defence Police
MCS	-	Mobile Catering Squadron
MOD	-	Ministry of Defence
NILO	-	National Interagency Liaison Officer
NEO	-	Nuclear Emergency Organisation
NERIMS	-	Nuclear Emergency Response Information Management System
NGF	-	Nuclear Guard Force
NST	-	NEO Standardisation Test
PAG	-	Procedures Authorisation Group
RVP	-	Rendezvous Point
SCG	-	Strategic Co-ordination Group
SNM	-	Special Nuclear Material
SME	-	Subject Matter Expert
SMARTEU	-	Scottish Multi Agency Resilience Training and Exercising Unit
SOPs	-	Standing Operating Procedures
SCC	-	Situations Co-ordination Centre
STAC	-	Scientific & Technical Advice Cell
TCG	-	Tactical Co-ordinating Group
TCP	-	Temporary Control Post

